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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID D. RATCLIFF, NICHOLAS C. KLIEWER, and
RUSTIN W. ALLRED

Appeal 2008-5319
Application 09/918,377
Technology Center 2600

Decided: January 12, 2009

Before KENNETH W. HAIRSTON, JOSEPH F. RUGGIERO, and
ROBERT E. NAPPI, *Administrative Patent Judges.*

NAPPI, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 6(b) of the final rejection of claims 1 through 19.

We affirm the Examiner's rejections of these claims.

INVENTION

The invention is directed towards an audio processing device which has increased configurability without increasing the per-channel cost of the

device. See page 2 of Appellants' Specification. Claims 1 and 13 are representative of the invention and reproduced below:

> 1. An audio processing machine comprising:
> a plurality of audio inputs;
> a plurality of audio outputs;
> a plurality of audio filters;
> a plurality of audio processing channels; and
> a plurality of multiply switches configured to selectively mix the plurality of audio inputs and the plurality of audio outputs such that audio signals passing through the plurality of audio inputs are processed via a plurality of audio filters selected from the plurality of audio filters and a plurality of audio processing channels selected from the plurality of audio processing channels to generate at least one desired audio output signal.
>
> 13. An audio processing device having a plurality of multiply switches operational to selectively mix a plurality of audio input signals, a plurality of filtered audio signals generated therefrom the plurality of audio input signals and a plurality of processed audio signals generated therefrom the plurality of filtered audio signals to generate at least one desired audio output signal.

REFERENCES

Cooper	US 5,333,200	Jul. 26, 1994
Matheny	US 6,148,314	Nov. 14, 2000
Poss	US 6,151,179	Nov. 21, 2000
Tang	US 6,298,370 B1	Oct. 2, 2001
Moorer	US 6,904,152 B1	Jun. 7, 2005

REJECTIONS AT ISSUE

The Examiner has rejected claims 1, 6, 7, 12, 13, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Moorer in view of Cooper. The Examiner's rejection is on pages 4 through 6 of the Answer[1].

The Examiner has rejected claims 2, 3, 8, 9, 14, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Moorer in view of Cooper, and Matheny. The Examiner's rejection is on pages 6 and 7 of the Answer.

The Examiner has rejected claims 5, 11, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Moorer in view of Cooper and Poss The Examiner's rejection is on pages 7 and 8 of the Answer.

The Examiner has rejected claims 4, 10, 16, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Moorer in view of Cooper, Matheny, and Tang. The Examiner's rejection is on pages 8 through 10 of the Answer.

ISSUES

Appellants argue on pages 4 and 5 of the Brief[2] that the Examiner's rejection of claims 1, 6, 7, 12, 13, and 18[3] under 35 U.S.C. § 103(a) is in error. Appellants reason that the claims require multiply switches to select

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[1] Throughout the opinion we make reference to the Answer, mailed August 27, 2007, for the respective details thereof.

[2] Throughout the opinion we make reference to the Brief, received May 2, 2007, for the respective details thereof.

[3] Appellants' arguments group these claims together. Thus, in accordance with 37 CFR § 41.33 (c)(1)(vii), we select claim 13 as representative of the

filters and to select processing channels, and that Moorer does not teach this feature. Brief 4 and 5. Further, Appellants argue that the filters taught by Cooper are for crosstalk cancellation between two microphones and that Cooper does not teach filter selection. As such, Appellants argue one of skill in the art would not consider applying Cooper to the teachings of Moorer which uses multiple microphones. Brief 5.

Thus, Appellants' arguments present us with two issues: have Appellants shown that the Examiner erred in finding that the combination of Moorer and Cooper teaches the plurality of multiply switches as claimed, and have Appellants shown that the Examiner erred in combining the teachings of Moorer with filters as taught by Cooper.

Rejections of claims 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, and 19

Appellants' additional arguments directed to the rejections of 2, 3, 5, 8, 9, 11, 14, 15, and 17 on pages 5 and 6 of the Brief, merely state "Appellant[s] relies upon the patentability of base claims 1, 7, and 13." Thus, Appellants' arguments with respect to the rejections of claims 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, and 19 present us with the same issue as discussed with respect to claims 1, 7, and 13.

PRINCIPLES OF LAW

In analyzing the scope of the claim, Office personnel must rely on Appellants' disclosure to properly determine the meaning of the terms used in the claims. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995). "[I]nterpreting what is *meant* by a word *in* a claim 'is not to

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group.

be confused with adding an extraneous limitation appearing in the specification, which is improper.'" (Emphasis original). *In re Cruciferous Sprout Litigation,* 301 F.3d 1343, 1348 (Fed. Cir. 2002) (citations and quotations omitted).

On the issue of obviousness, the Supreme Court has stated that "the obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). The mere existence of differences between the prior art and the claim does not establish nonobviousness. *Dann v. Johnston*, 425 U.S. 219, 230 (1976). The issue is "whether the difference between the prior art and the subject matter in question 'is a difference sufficient to render the claimed subject matter unobvious to one skilled in the applicable art. . . .'" *Dann*, 425 U.S. at 228 (citation omitted) (finding system for automatic record keeping of bank checks and deposits obvious in view of nature of extensive use of data processing systems in the banking industry and "closely analogous" patent for an automatic data processing system used in a large business organization for keeping and updating system transaction files for each department of the organization). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *KSR*, 127 S. Ct. at 1740.

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that "the principles laid down in *Graham* reaffirmed the 'functional approach' of

Hotchkiss, 11 How. 248 [(1850)]." *KSR,* 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (emphasis added)), and reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The Court explained:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. The operative question in this "functional approach" is thus, "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

FINDINGS OF FACT

1. Appellants' Specification describes using a multiplying circuit element as a switch. By multiplying by zero (0) the path is shut off, multiplying by one (1) the path is turned on, and multiplying by negative one (-1) the path is turned on, but inverted (180 degrees out of phase). Specification page 2, ll. 6-11.

2. Moorer teaches a technique for processing audio signals such that a small number of signals can be used to create a sound field with spatial harmonics that matches the original sound field. For example a recording can be made from three microphones; the signals are processed and used to create a five channel recording which can be used to drive a speaker to recreate the original sound field. Abstract, Figure 3, col. 5, ll. 40-65.
3. The inputs to Moorer's device are input to an array of amplifiers (e.g. items 21-25, 31-35, of Figure 3, 151-159 of Figure 7). The gains of these amplifiers control the transfer function of the matrix and are set by a control processor. Col. 6, ll. 11-34, col. 10, ll. 59-67.
4. Cooper teaches an audio processing circuit which provides improved simulation of a listening environment. Abstract.
5. Cooper teaches that filters are used in the sound processing for many purposes including elimination of crosstalk. See col. 7, ll. 38-42, col. 14, ll. 23-29.

ANALYSIS

First Issue.

Appellants' arguments have not persuaded us that the Examiner erred in finding that the combination of Moorer and Cooper teaches the plurality of multiply switches as claimed. In response to Appellants' arguments, the Examiner stated:

> In this case the claims read "a plurality of multiply switches" is "configured to selectively mix the plurality of audio inputs and the plurality of audio outputs". The claims do not specify "a plurality of audio filters" being "selected" by "a plurality of multiply switches" nor the claims specify "a plurality of audio processing channels" being

> "selected" by "a plurality of multiply switches" in the clause that followed "such that".
>
> In addition, the claims do not specify to change the "processing channels". The claims state "audio signals passing through the plurality of audio inputs are processed via . . . audio filters . . . and . . . audio processing channels . . ." instead. As presented in the Office Action, Moorer discloses detailed microphone matrix (129) of Figs. 5 and 6 in Fig. 7, in which the gains of the amplifiers 151-159 are individually set by the control processor (133 or 141, FIG. 5 or 6) through circuits (135). These gains define the transfer function of the microphone matrix 129 (col. 10, lines 36-64). Thus the microphone matrices of Moorer meet the selecting multiply switches of Claim 1.

Answer 11.

We concur with the Examiner's claim analysis. As discussed above, we select claim 13 as representative of the claims rejected over Moorer in view of Cooper. Claim 13 does not recite that the multiply switches select filters and processing channels as argued by Appellants on page 4 of the Brief. Rather, claim 13 recites that the multiply switches "selectively mix a plurality of input signals." As identified above, the Examiner has found that Moorer teaches a microphone matrix with amplifiers. We concur with the Examiner's findings. Facts 2 and 3. Further, the Examiner has identified that Moorer's microphone matrix meets the selecting multiply switches. Appellants' arguments have not persuaded us that the Examiner erred in finding that Moorer teaches the claimed multiply switches as Appellants' arguments directed to the switches selecting filters and channels are directed to limitations not recited in the claims. While Appellants' Specification may describe such functionality, we decline to import such functionality to the

claims. Accordingly, Appellants have not persuaded us that the Examiner erred in finding that the combination of Moorer and Cooper teach the plurality of multiply switches as claimed.

Second Issue.

Appellants' arguments have not persuaded us that the Examiner erred in combining the teachings of Moorer with filters as taught by Cooper. In response to Appellants' arguments the Examiner states:

> Regarding Appellants' argument that "there is no filter selection (by the multiply switches) as required by claim 1", please see § 8 above for response.
>
> In addition, one of ordinary skill in the art at the time the invention was made when facing design need of filtering audio input signals to generate filtered audio signals would have been obvious to have considered the audio filters taught by Cooper.

Answer 12. We concur with the Examiner's reasoning. As discussed *supra*, the claims do not recite a limitation directed to switching filters. Thus, whether or not Cooper teaches switch selection is not germane to the rejection of the claim. Further, Cooper teaches that filters are used in audio processing. Fact 5. We consider that using filters in the audio processing system of Moorer to be nothing more than using known elements to achieve predictable results. Here it is known that filters are used to reduce unwanted parts of a signal (e.g. in Cooper, the crosstalk component). We find that the use of filters in the system of Moorer would yield the predictable result of eliminating unwanted elements of the filtered signal. Accordingly, Appellants have not persuaded us that the Examiner erred in combining the teachings of Moorer with filters as taught by Cooper.

For the aforementioned reasons, Appellants' arguments have not persuaded us of error in the rejection of claim 13 (or claims 1, 6, 7, 12, and 18 grouped with claim 13).

Rejections of claims 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, and 19.

As discussed above, Appellants arguments directed to the rejections of these claims rely upon the arguments directed to the rejection of claims 1, 7, and 13. As discussed *supra* Appellants have not persuaded us that the Examiner erred in rejecting claims 1, 7, and 13. Accordingly, we similarly sustain the Examiner's rejections of claims 2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, and 19.

ORDER

The decision of the Examiner to reject claims 1 through 19 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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